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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

REPORT OF

GENERAL SERVICE WORK AND EXTENSION

FOR CALENDAR YEAR 1938

Compiled by
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445 U. S. Court House
Portland, Oregon
Sept. 25, 1939

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During 1938, for the third consecutive year, a record was kept of all requests for general information that reached the Portland forest insect laboratory. These requests are herein summarized in much the same manner as those of 1937.[1] All requests are included, except those concerning control and surveys originating from cooperating agencies, such as the U. S. Forest Service, the National Park Service, and the Indian Service.

Altogether, 241 inquiries, exclusive of those for specific published material, were received. Several included more than one problem, to make a grand total of 250 subjects upon which information was desired. Of these problems, 149, or 60 percent, directly concerned forest entomology. The remaining 40 percent covered a great variety of subjects, many of which were little related to the field of our investigations.

By a comparison of the requests recorded in 1937 and 1938 (see Appendix I) it can be seen that those of 1938 outnumber the ones of 1937, 250 to 171. This difference is probably more apparent than real, for a comparison of the requests from July 1 to December 31 shows that 118 were recorded in 1937, whereas only 107 were recorded in 1938. On this basis it is probable that during the early months of 1937 a considerable number of requests were not recorded in the files.

1/ Report of general service work and extension for calendar year 1937. Compiled by R. L. Furniss. January 20, 1938.

In answering the calls during 1938, examinations were made in 48 cases and letters were required in 61 cases. In all, 94 requests prompted an examination, a letter, or both. The remaining cases were disposed of through personal contacts or by reference to the proper authorities.

As stated previously, requests for specific publications are not included in this listing of subjects. More than 250 copies of 32 different publications were distributed, many in answer to direct application for certain published material.

A few noteworthy records were obtained during 1938. Other calls yielded considerable data on the occurrence of certain forms of insect-caused damage, particularly that to forest products. Most of the 42 calls concerning carpenter ants were investigated and gave information on the type and extent of damage caused by these insects. In a few cases infested houses were made available for experimental control of carpenter ants.

In the following discussion, requests for information are grouped under several main classifications. In each group the total number of requests is given, followed by pertinent comments on the more important or unusual cases.

INSECTS AFFECTING FOREST TREES

Thirty-three requests were received concerning this group of insects. Among these were several records of considerable interest.

Dendroctonus brevicomis Lec. During the course of the year nine inquiries were received concerning this bark beetle. Most of these were requests for information on control from owners of small tracts of timbered land in eastern Oregon.

Halisidota argentata Pack. In three instances during the spring this defoliator was reported as feeding on Douglas fir in Oregon and Washington. Station records show that H. argentata was considerably more abundant along the Washington and Oregon coast during 1938 than for several years past. Feeding was noted on Douglas fir, Sitka spruce, and the shore form of lodgepole pine, but no killing or serious weakening of infested trees was observed.

Hemerocampa pseudotsugata McD. On August 16 an outbreak of this defoliator was reported on Rudio Mountain on the Malheur National Forest, where a considerable area of true fir and Douglas fir was being defoliated. A curious thing has been observed in connection with this insect. East of the Cascade Range it is a serious enemy of Pseudotsuga and Abies, but west of the Cascades our records show it only on ornamental spruce. Another instance of the latter type of infestation was noted on August 15 when cocoons and mature larvae were found on a Colorado blue spruce in Portland.

Hilonia lurubrosa Hulst. A heavy flight of adults was reported along the South Fork of the Stillaguamish River on the Mount Baker National Forest on October 17. No evidences of defoliation were seen. It was believed that this might be the forerunner of a serious outbreak, but two examinations in 1939 have failed to reveal any further evidences of the presence of this insect.

Matsucoccus bisetosus Morr. On November 7 a stand of over-stocked ponderosa pine, 30 to 60 years old, on about 400 acres on the Burns Ranger District of the Malheur National Forest was reported as so badly infested with this scale that no crop trees could be found. Because of the general deformity of the boles and branches of the affected trees, the infestation was presumed to have been present for several decades.

INSECTS AFFECTING FOREST PRODUCTS

Altogether, 89 requests were received concerning insects in this group. Of these, 42, or nearly half, were about carpenter ants.

Powder-post beetles. Reports of damage by powder-post beetles continued to increase. In all, 9 cases of Lyctus-caused damage were brought to our attention. Five of these involved damage to oak floors. Other material that was damaged included furniture, tool handles, and box shook. In accordance with a suggestion made by H. H. Wilford, a wash of turpentine and kerosene (9:1) was recommended for control wherever practical.

One instance of damage caused to furniture by Anobiidae was reported.

Buprestis spp. Two species, Buprestis aurulenta L. and B. langi Mann., are responsible for damage to finished Douglas fir lumber in the Pacific Northwest. The work of these two insects is similar and is lumped as buprestid damage in the general records. A large proportion of the frame houses in western Oregon and Washington show Buprestis emergence holes. Under certain circumstances the larvae may do considerable damage, but as a usual thing the effects of their work are insignificant from a structural standpoint. A study is now under way to determine the habits of these insects and the nature of the damage that they cause. Seven calls regarding buprestid damage were received. Most of these involved infestation of house siding or porch flooring.

Cerambycids in fire-killed Douglas fir. The activities of cerambycid borers, chiefly Criocephalus and Asemum, in trees killed by the Tillamook fire made salvage increasingly more difficult during 1938. Four inquiries were received concerning these borers in logs salvaged from the Tillamook burn.

In a tax appeal case that came to court on October 14, 1938, the plaintiff contended that, because of the inroads of insects and rot, there has been a continuing annual loss to the burned trees since the fire. Mr. F. P. Keen gave expert testimony concerning the rate of insect penetration into the burned trees up to the time of the court proceedings. The decision was given in favor of the plaintiff.

Another interesting aftermath of the Tillamook fire, observed during 1938, is that a small percentage of the lower grades of lumber cut from salvaged trees contains living cerambycid larvae. Some of this infested lumber has gone into the construction of small houses during the past year or two. During April two reports of insects emerging from siding of such new houses were investigated. In each case it was found that cerambycid adults had developed in the sheathing and had emerged through the siding. Only a few emergence holes were formed and no material damage was done.

Insects in cordwood. Adults of wood and bark borers, particularly those that attack oak and ash wood, frequently become numerous enough in houses to annoy the inhabitants. Flights of the emerging insects usually occur in the late fall, winter, or early spring. They are often thought to be termites. Three species were brought to our attention during the past season: Pseudopityophthorus pubipennis (Lec.) (3 reports), Hexolytus conjunctus (Lec.) (2 reports), and Lepersinus sp. (1 report). In cases of this kind, if the occupant of the house is especially anxious to eliminate the insects, spraying the adults with pyrethrum-kerosene spray is recommended.

Termites. Termites are more frequently reported than any other insect, but in most cases the insect involved proves to be something else, frequently carpenter ants. In practically all instances of actual infestation by termites, the species responsible is the large dampwood termite, Zootermopsis angusticollis Hagen.

In every case that we have investigated, incidence of the dampwood termite has been dependent upon a supply of moist rotten wood. Structural changes to eliminate the source of moisture have been recommended rather than direct control measures for termites.

The only significant instance of infestation by Zootermopsis was the discovery of this termite in lumber cut from trees that had been salvaged from the Tillamook burn. The lumber in question had been shipped to San Francisco, where the termites were found by the purchaser. Despite several attempts by Mr. J. M. Miller to determine the nature of the infestation, no contact could be established with the party originating the report. Hence, by pure conjecture it is assumed that only a few termites were found. Termites are not one of the advance agencies of deterioration of fire-killed Douglas fir. At present in the Tillamook burn they are practically confined to the badly deteriorated sapwood. Consequently, there should be little trouble from these insects if no sapwood is included on lumber that is shipped in interstate trade.

During 1938, 14 requests that definitely concerned termites were received. Curiously, although the subterranean termite, Reticulitermes hesperus Banks, is generally distributed in western Washington and Oregon and the climatic conditions seem favorable for its development, damage is seldom reported to us. Only one instance of subterranean termite damage was received last year. In this case a light infestation was found in the woodwork of the County Court House at Port Orchard, Wash.

Carpenter ants. Calls regarding carpenter ants comprised one-sixth of the total number of calls that were received during the past year. Nearly universal among the 42 requests concerning carpenter ants was the desire for information on the control of these pests in houses. In 20 cases the ants were identified to species as follows: 13 were Camponotus herculeanus modoc Wheeler, 4 were C. maculatus vicinus Mayr., and 3 were C. laevigatus F. Smith. Experimental control was attempted in a few houses and will be reported separately in a report on investigations of measures for controlling carpenter ants.

INSECTS AFFECTING SHADE AND ORNAMENTAL TREES

Reports of insects attacking shade trees were received in about the same numbers as in 1937 and involved practically the same species. Twenty-seven calls fell in this category.

Adelges cooleyi Gill. This was the most abundant of the shade-tree infesting insects, with 6 reports received during April and May. The forms on both Douglas fir and spruce were reported. On May 10 a heavy infestation on large ornamental Douglas firs on the U. S. Veteran's Hospital grounds at American Lake, Wash., was examined. Subsequently these trees were sprayed with a nicotine and oil spray by a commercial concern. Treatment was applied too late in the season for best results, but a good kill of the insects still remaining on the firs was obtained.

Cryptorhynchus lapathi L. The mottled poplar and willow borer is continuing to kill ornamental and native willows in the vicinity of Portland. Infestation is now generally distributed on the native willows throughout western Washington and northwestern Oregon. Five cases of damage to ornamentals were received from June to September.

Galerucella xanthomelaena (Schr.). A continuing control against this chrysomelid is necessary to reduce the amount of damage that it causes to ornamental elms in Portland. Most frequent cause of complaint is the emergence of adults from hibernation in houses during the spring. Four inquiries came in concerning the elm leaf beetle.

Argyresthia cupressella Wlsm. During May and June numerous ornamental Cupressus about Portland were noted as seriously defoliated by Argyresthia cupressella. It was also found on Thuja and Chamaecyparis, but to a much lesser degree.

Most of the larvae had pupated by the first week of May. Emergence of the adults occurred during May and eggs were laid during late May and early June. Practically all eggs had hatched and the small larvae were mining in the needles by the second week of July. Apparently the part grown larvae spend the winter in the needles.

One call was received concerning these insects. In this case a nicotine-oil spray (nicotine sulphate 40%—1 part; water—300 parts; summer oil—16 parts; whale oil soap—1/2 part) was recommended and used against the eggs. Two applications were made 10 days apart, but only partial control was achieved. There was very slight burning of the foliage.

Stilpnotia salicis L. The satin moth was quiescent in Washington and Oregon during 1933. Only one call was received concerning a local infestation at Halsey, Oreg. Hyperomalus nidulans Thomson, a chalcid parasite, which was colonized on the satin moth in Washington is now well established in Oregon.

UNCLASSIFIED

In this rather large group of requests (39) there were two subjects of considerable interest.

Winter injury of Douglas fir. Parch blight of foliage on the east side of Douglas firs in the vicinity of Portland was widely evident during the spring. This type of injury, which prompted three inquiries, results from the drying effect of east winds coming down the Columbia Gorge during the winter months. Parch blight is of frequent occurrence around Portland, but in the spring of 1933 was more prevalent than usual.

Nomius pygmaeus (Dej). The malodorous ground beetle became remarkably abundant during July, August, and September, when houses, stores, and public buildings were invaded by the odoriferous little reddish-brown adults. This was the first time that it has been called to our attention. Six requests for control were received but none could be offered other than to capture and dispose of the beetles individually.

RESUME OF REQUESTS

Classification	Number of Requests
Insects affecting forest trees	30
Insects affecting forest products	89
Insects affecting shade and ornamental trees	27
Insects affecting gardens and orchards	21
Household insects	33
Insects affecting man and animals	4
Forest pathology	7
Unclassified	39
Total	250

APPENDIX I

Occurrence of Requests by months, 1937 and 1938

Month	1937	1938
January	5	14
February	3	12
March	6	10
April	7	29
May	23	31
June	9	24
July	36	31
August	28	29
September	21	23
October	18	13
November	13	7
December	2	7
Unaccounted	1	-
Total	172	250

INDEX TO SPECIES